

REMARKS

This Amendment responds to the Final Office Action mailed January 30, 2008, in the above-identified application. The amendments are made in order to place the application in condition for allowance and do not raise new issues or require extensive consideration. Accordingly, entry of the Amendment and allowance of the application are respectfully requested.

Claims 1-12, 25-36 and 38 were previously pending in the application. Claims 1 and 25 have been amended solely for clarification and not to overcome the prior art of record. Accordingly, claims 1-12, 25-36 and 38 are currently pending, with claims 1 and 25 being independent claims. No new matter has been added.

The Examiner has rejected claims 1, 2, 5, 11 and 36 under 35 U.S.C. §103(a) as unpatentable over Scribe (Article entitled: "Scribe: A Large-Scale and Decentralized Application-Level Multicast Infrastructure") in view of Feigenbaum et al (U.S. 4,718,005) and Crockett et al. (U.S. 2003/0154243). Claims 3, 4 and 12 are rejected under 35 U.S.C. §103(a) as unpatentable over Scribe in view of Feigenbaum et al. and Crockett et al., further in view of Speakman et al. (U.S. 6,389,475). Claim 6 is rejected under 35 U.S.C. §103(a) as unpatentable over Scribe in view of Feigenbaum et al. and Crockett et al., further in view of Jonsson (U.S. 2003/0162499). Claim 7 is rejected under 35 U.S.C. §103(a) as unpatentable over Scribe in view of Feigenbaum et al., Crockett et al., and Jonsson, further in view of mail.yahoo.co.uk. Claim 8 is rejected under 35 U.S.C. §103(a) as unpatentable over Scribe in view of Feigenbaum et al., Crockett et al., and Jonsson, further in view of Novaes et al. (U.S. 20030012130). Claim 9 is rejected under 35 U.S.C. §103(a) as unpatentable over Scribe in view of Feigenbaum et al., Crockett et al., Jonsson and Novaes et al., further in view of Speakman et al. Claim 10 is rejected under 35 U.S.C. §103(a) as unpatentable over Scribe in view of Feigenbaum et al., Crockett et al., Jonsson, Novaes et al., and Speakman et al., further in view of Burbeck et al (U.S. 7,143,139). Claims 25, 26, 27 and 38 are rejected under 35 U.S.C. § 103(a) as unpatentable over Scribe in view of Speakman et al. and O'Sullivan (Article entitled: "The Internet Multicast Backbone"). Claim 28 is rejected under 35 U.S.C. §103(a) as unpatentable over Scribe in view of Speakman et al., and O'Sullivan, further in view of Novaes et al. Claims 29 and 30 are rejected under 35 U.S.C. §103(a) as unpatentable

over Scribe in view of Speakman et al, O'Sullivan and Novaes et al., further in view of Stanko (U.S. 2005/0074126). Claim 31 is rejected under 35 U.S.C. §103(a) as unpatentable over Scribe in view of Speakman et al, O'Sullivan, Novaes et al., and Stanko, further in view of Traversat et al (U.S. 2002/0143855). Claims 32 and 35 are rejected under 35 U.S.C. §103(a) as unpatentable over Scribe in view of Speakman et al. and O'Sullivan, further in view of Novaes et al. Claims 33 and 34 are rejected under 35 U.S.C. §103(a) as unpatentable over Scribe in view of Speakman et al. and O'Sullivan, further in view of Burbeck et al. The rejections are respectfully traversed in view of the amended claims.

The Scribe multicasting infrastructure is described at page 3, line 11 to page 4, line 8 of the present application.

Feigenbaum discloses techniques which permit data processing systems linked to nodes of a communication network to create and use alias names on a distributed basis, and thereby to sustain data communications between resources known by various names, and distributed throughout the network, without dependence on a central or master directory (col. 1, lines 38-43). In discussing extension of name communications through nodal bridges and gateways, Feigenbaum describes topological restrictions on the transfer of requests across network boundaries (col. 11, lines 14-58). In particular, Feigenbaum describes providing a "hop count" number with a communication to restrict its transfer across network boundaries. This number indicates the number of network boundaries which the communication may cross (col. 11, lines 19-27).

Crockett describes a method and apparatus for registering a user in a group communication network, including a location server that maintains user location information [¶0048]. Crockett states that the user location information may be the IP address of the client, regardless of whether the client is connected via wireless or wireline services [¶0096].

Speakman describes content-based filtering of multicast information. A set of sources that wishes to distribute information in different categories each associates a content descriptor with messages containing information in those categories. A mapping server associates a multicast address and a content mask with each content descriptor, so that network elements can distribute

only those messages which are of interest to recipients in multicast distribution trees (col. 1, lines 55-67). Speakman does not disclose or suggest joining a first multicast tree and joining a second multicast tree that includes a subset of the overlay nodes in the first multicast tree, as claimed. Instead, Speakman describes a network where all nodes perform content-based filtering of messages.

O'Sullivan describes the Internet multicast backbone and states that the multicast backbone is a cooperative voluntary effort, consisting of Internet service providers who route multicast traffic over their networks and end users who install multicast routers at their sites (Background). O'Sullivan's technique for participating is that a user simply opts out of the multicast backbone entirely if he does not wish to participate.

Amended claim 1 is directed to a method of providing a scalable multicast infrastructure for multicast messaging on an overlay network including a set of nodes, wherein each node in the set of nodes has a node name indicating a network region of the node, the method comprising forming a multicast tree from a subset of the set of overlay nodes such that a root node of the multicast tree belongs to a first network region and a path in the multicast tree is prohibited from reentering the first network region once the path leaves the first network region, and disseminating messages through the multicast tree.

Feigenbaum does not disclose or suggest forming a multicast tree such that a path in the multicast tree is prohibited from reentering the first network region once the path leaves the first network region, as required by claim 1. Instead, Feigenbaum describes a broadcast communication provided with a hop count that restricts its transfer across network boundaries. The hop count indicates the number of network boundaries which the communication may cross (col. 11, lines 19-27). Feigenbaum states that a zero hop count value prevents further forwarding so that messages crossing between B and C could not reenter A (col. 11, lines 46-49).

Applicant submits that adding a hop count to a communication, which has the effect of preventing further forwarding when the hop count decrements to zero, is very different from forming a multicast tree such that a path in the multicast tree is prohibited from reentering a first

network region once the path leaves the first network region. A *path* in a multicast tree that does not reenter a first network region is distinctly different from a *message* that does not reenter the first network region. Feigenbaum does not disclose or suggest forming a multicast tree as claimed. Furthermore, modifying a communication to include a hop count is a significant burden which can require decrypting, appending information and re-encrypting the message. Scribe and Crockett do not provide the teachings that are lacking in Feigenbaum. For at least these reasons, amended claim 1 is clearly and patentably distinguished over Scribe in view of Feigenbaum and Crockett, and withdrawal of the rejection is respectfully requested.

Claims 2-12 and 36 depend from claim 1 and are patentable over the cited references for at least the same reasons as claim 1.

Amended claim 25 is directed to a method of participating in a scalable multicast infrastructure for multicast messaging on an overlay network including a set of nodes, the method comprising joining a first multicast tree including overlay nodes in an overlay routing path between a subscriber node and a root node of the first multicast tree, wherein the first multicast tree includes overlay nodes that voluntarily participate in message dissemination and non-participating overlay nodes that do not wish to participate in message dissemination, and joining a second multicast tree formed from the first multicast tree, wherein the second multicast tree includes a subset of the overlay nodes in the first multicast tree, the subset consisting of only the overlay nodes that voluntarily participate in message dissemination, and wherein the second multicast tree excludes the non-participating nodes that do not wish to participate in message dissemination. The excluded non-participating nodes do not wish to receive messages or to participate in message dissemination.

The Examiner contends that Speakman shows joining a second multicast tree formed from the first multicast tree, wherein the second multicast tree includes a subset of the overlay nodes in the first multicast tree. Applicant must respectfully disagree. Speakman states that each recipient obtains the associated source, multicast address and content mask, for each content descriptor of interest and uses that information to join the multicast distribution tree for that information (col. 2, lines 1-12). However, Speakman requires every node in the forwarding path to participate if any of the descendent nodes in the tree are interested in the data, regardless of whether the forwarding node

is itself interested in the data. Thus, all the nodes in Speakman are participating nodes that participate in message dissemination. Speakman does not disclose or suggest non-participating nodes as claimed and does not disclose or suggest joining a second multicast tree formed from a first multicast tree, as claimed.

The Examiner further contends that O'Sullivan shows the subset consisting of only nodes that voluntarily participate in message dissemination. However, O'Sullivan's technique for participating is that a node simply opts out of the multicast backbone entirely if the node does not wish to participate. The non-participating nodes in O'Sullivan are not part of any multicast tree and so cannot aid in the construction of a second multicast tree. By contrast, amended claim 25 recites joining a first multicast tree that includes non-participating nodes that do not wish to participate in message dissemination. The non-participating nodes of claim 25 are different from the non-participating nodes of O'Sullivan.

In summary, the cited references do not disclose or suggest a method of participating in a scalable multicast infrastructure as defined by amended claim 25. Accordingly, withdrawal of the rejection is respectfully requested.

Claims 26-35 and 38 depend from claim 25 and are patentable over the cited references for at least the same reasons as claim 25.

Based upon the above discussion, entry of the amendment and allowance of the application are respectfully requested.

Since each of the dependent claims depends from an independent claim that is believed to be in condition for allowance, Applicants believe that it is unnecessary at this time to argue the allowability of each of the dependent claims individually. However, Applicants do not necessarily concur with the interpretation of the dependent claims as set forth in the Office Action, nor do the Applicants concur that the basis for the rejection of any of the dependent claims is proper. Therefore, Applicants reserve the right to specifically address the patentability of the dependent claims in the future.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

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Respectfully submitted,

By William R. McClellan
William R. McClellan
Registration No.: 29,409
WOLF, GREENFIELD & SACKS, P.C.
Federal Reserve Plaza
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
617.646.8000